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(54) Abstract Title
Messaging test tool

(57) A test tool for a messaging system comprising a plurality of post offices (14) adapted to transmit and receive mail messages. The test tool comprises means (10) for defining a plurality of test cases (24) for which said messaging system is to be tested (10), each test case defining a message originator and said originator's post office, one or more message recipients and the or each recipient's post office and a message content. A message generator (12) generates one or more test messages from a test case, according to the message originator's post office and transmits the or each test message to the originators post office. A message checker (18) checks for receipt of the or each test message at the or each recipients post office. Both the checker and generator record success or failure to transmit or receive the or each test message in a results database (20).

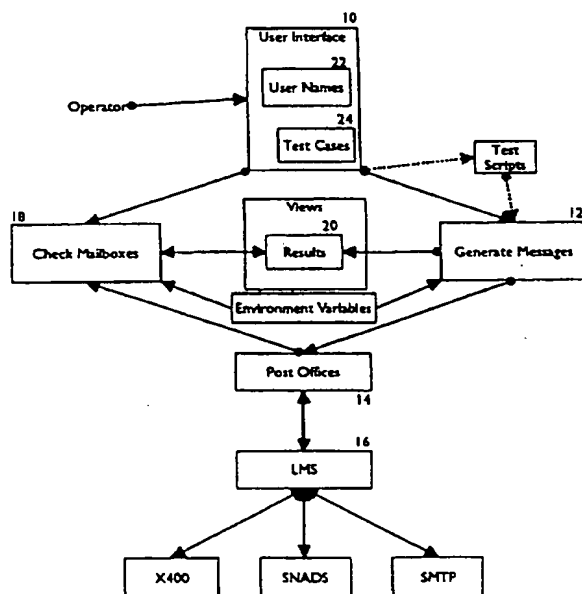


Figure 2

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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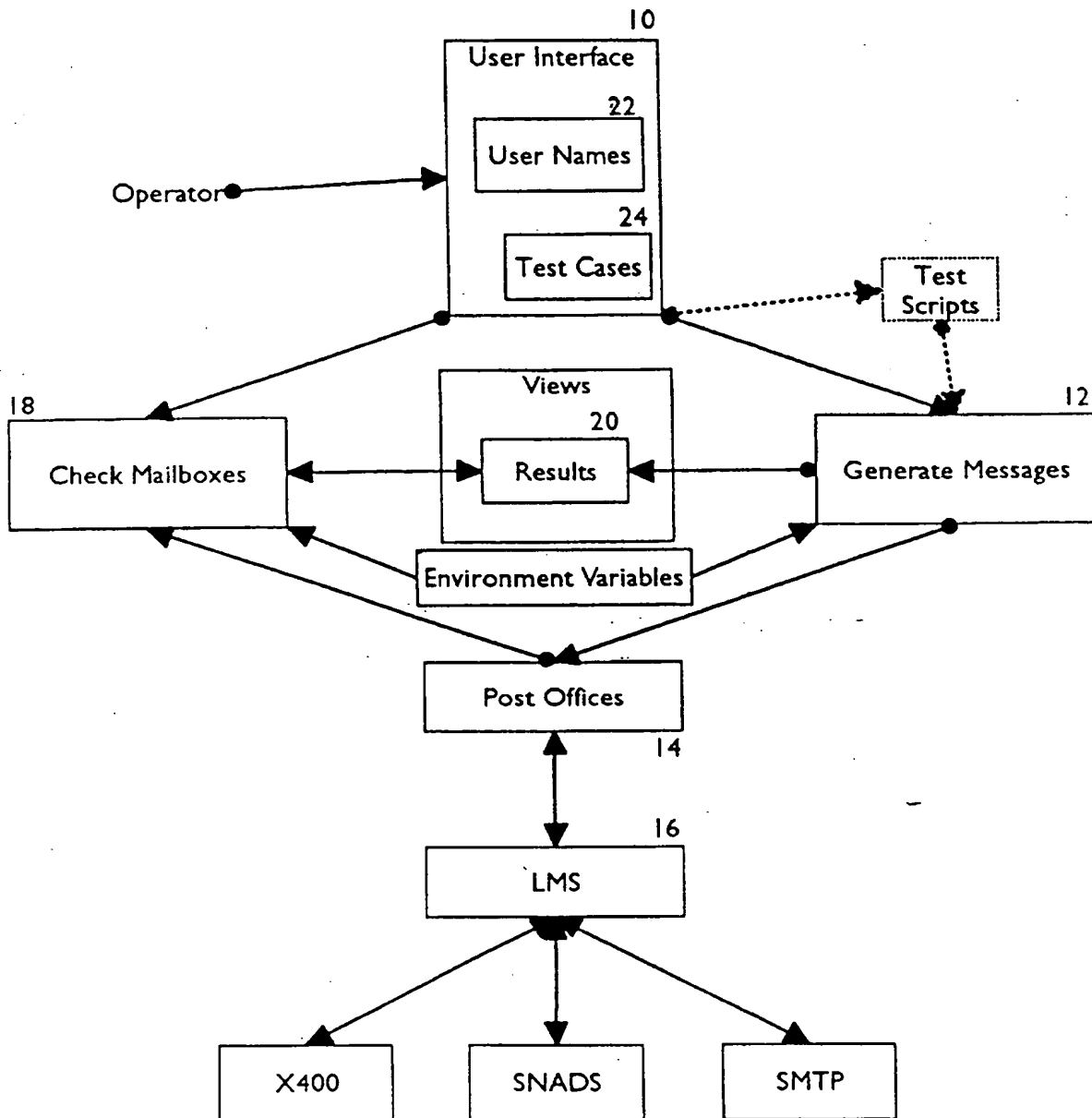


Figure 2

Figures 3(a) and (b) are screen captures for an user interface component of the test tool of Figure 2;

Figure 4 is a diagram illustrating the information stored in a test case; and

Figure 5 illustrates the generation of a macro file for sending and receiving test messages through an IBM host.

The present invention is based on the fact that many post offices and mail protocols conform to the Microsoft MAPI (Messaging Application Program Interface) standard; older systems such a Lotus cc:Mail use an Import/Export method of uploading messages to be transmitted for subscribers and downloading messages for subscribers; Lotus Notes uses a dedicated Notes API and in order to send and receive SNADS mail a subscriber can establish a 3270 terminal emulation session to connect to an IBM host computer. There is therefore a limited number of ways through which messages are transmitted and received through post offices.

Referring now to Figure 2, the present embodiment provides a messaging test tool comprising a user interface component 10 in which a user defines and stores one or more test cases in a database 24, each comprising a message to be sent from a sender to one or more recipients. The stored message definitions are subsequently used by a message generating component 12 which generates a mail message according to the message sender's post office type, eg Lotus Notes, connects to the post office according to the sender's post office API, eg Notes API and causes the senders post office 14 to transmit the message.

The post office 14 then relays the message either to mailboxes of subscriber recipients of the post office, to the message switch 16 or via some other route, for example to an independent ISP for Internet mail.

The test tool comprises a message checking component 18 which periodically checks for receipt of messages by connecting to respective recipients post offices using the recipients post office details stored for the testcase. Success or failure to transmit or receive a message is preferably recorded by both the message generating and message checking components 12, 18 in a results database 20.

When a relational results database is used, for example, a Lotus Notes database, an operator can use any number of views of the results database 20 to assess the correct operation of the messaging system. For example, messages can be viewed according to sender or according to recipient which could help to determine if unsuccessfully transmitted

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messages are failing because of a fault in the sender's post office or the receiver's post office or the associated port of the message switch.

Figure 3(a) is a screen capture from the user interface component 10 of the test tool implemented in Lotus Notes. Each test case is stored as an object in a database and is referred to by a Test ID attribute, in this case, TGEM0123. A brief text description of the test is also provided. The operator usually continues by first selecting an originator (sender) of the message. The user interface component includes a store 22 of user details reflecting the many different permutations of user. For each user, the store 22 includes a respective attribute for the: users platform eg CC for Lotus cc:Mail or Ex for Microsoft Exchange; login ID; and password, enabling the message generating and message checking components 12, 18 to connect to the user's post office and send or check for receipt of messages at the user's post office. The store 22 further includes a display name attribute for users, so that when the operator continues by selecting recipients (To:), copynames (cc:) and blind copynames (bcc:) for the test case message, the display name for chosen users can be inserted accordingly.

For ease of use, the store 22 is divided according to platform, and in the current embodiment, each user is provided with several aliases (SMTP, X400, SNADS and Local IBMLAN) for each platform. So when a user, for example, Fozzy Bear working for Shar Corporation registers with an Exchange post office connected to the message switch, he will be provided with aliases of the following type:

```
SMTP:    Fozzy.Bear@shar.corp.com
X.400:   c=gb;a=ibmx400;p=sharcorp;s=bear;g=fozzy
SNADS:   FBEAR@GBQQAAE9
IBMLAN:  Fozzy Bear (Shar Corp)
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any of which may be selected by the operator for use in the message. All of the aliases point to Fozzy Bear's local mailbox on the Exchange Post Office, so anyone addressing mail to any of these aliases from either local post offices connected to the switch or from the Internet, X400 or SNADS domain, should be sure of its receipt by Fozzy bear on Exchange.

It should be noted that under normal operation, the switch 16 does not connect to a specific machine when sending messages via SMTP or X400. Thus, in order to test for messages arriving from the Internet, the present embodiment employs respective machines simulating messages sent and to be received via SMTP or X400.

An ISOPRO for MAPI client from ISOCOR corporation (<http://www.isocor.com>) is used to test the X400 aspect of the messaging

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